



THE UNIVERSITY OF BRITISH COLUMBIA

sustainability

# ORCHARD COMMONS

**ARCHITECT** | Perkins and Will Architects

**STRUCTURAL ENGINEER** | Stantec

**CONSTRUCTION MANAGER** | Stuart Olsen Dominion Construction

**ADDRESS** | 6363 Agronomy Road, Vancouver BC

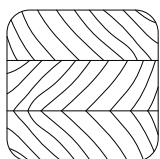






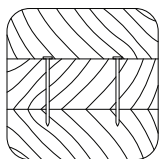
Photos: Michael Elkan | Courtesy: Perkins and Will Architects

The UBC Orchards Commons development combines two 18-storey student housing residences, with a shared student commons area that houses amenities and food services. The structure of the commons area features exposed mass timber elements including glue laminated timber (GLT) columns and beams, along with nail laminated timber (NLT) roof and stairs. The NLT roof panels that cover over 1,800 m<sup>2</sup> over the commons area were fabricated with local wood fibres that provide an aesthetic timber soffit.



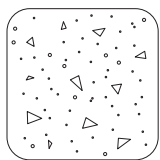
#### GLT

Columns and beams



#### NLT

Roof and stairs



#### CONCRETE

Foundation, mezzanine in commonsblock, structure for towers

#### GROSS FLOOR AREA

23,699 m<sup>2</sup>

#### HEIGHT

59 m | 18 storeys

#### PROGRAM

Student residence | Community

#### FUNCTIONS

Student residences, food services, social and study spaces

#### CERTIFICATION

LEED Gold (target)

#### MEP CONSULTANT

Stantec

#### SUSTAINABILITY CONSULTANT

Stantec

#### CONSTRUCTION

2014-2016

#### PROJECT COST

CDN\$125,9M (2016)





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# UBC BASEBALL INDOOR TRAINING CENTRE

**ARCHITECT** | Michael Green Architecture

**STRUCTURAL ENGINEER** | Equilibrium Consulting

**CONSTRUCTION MANAGER** | Kindred Construction

**ADDRESS** | 3085 Wesbrook Mall, Vancouver BC

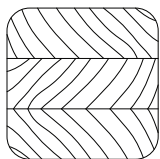






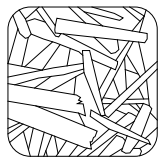
Photos: Rich Lam | Courtesy: UBC Athletics & Recreation

The state-of-the-art UBC Baseball Indoor Training Centre provides space for a comfortable training environment all year round. The building has a concrete foundation and a hybrid structure: the training area features exposed glue laminated timber (GLT) columns and beams and laminated strand lumber (LSL) tilt-up walls; the observation deck, offices, and visitor areas are conventional light wood frame structure. The structure is the first glulam LSL composite tilt up wall panel system of its kind.



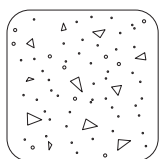
#### GLT

Columns and beams



#### LSL

Exterior walls and walls in training area



#### CONCRETE

Foundation

#### GROSS FLOOR AREA

1,200 m<sup>2</sup>

#### HEIGHT

9.4 m | 2 storeys

#### PROGRAM

Athletics

#### FUNCTIONS

Baseball training, offices, community room

#### MEP CONSULTANT

Mechanical: AME Group  
Electrical: Jarvis Engineering Consultants

#### CONSTRUCTION

2015

#### PROJECT COST

CDN\$3,5M (2015)





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# UBC BOOKSTORE

## Expansion and Renovation

**ARCHITECT** | office of mcfarlane biggar architects + designers (omb)

**STRUCTURAL ENGINEER** | Fast + Epp

**CONSTRUCTION MANAGER** | Syncra Construction

**ADDRESS** | 6200 University Blvd, Vancouver BC

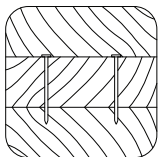






Photos: (Top) Andrew Latreille, (Circle) Ema Peter  
Courtesy: omb

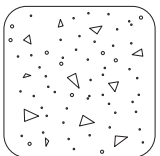
Operating since 1917, the UBC Vancouver Bookstore building was renovated in 2013 to improve the space and expand its footprint. The building's new roof consists of prefabricated hybrid wood-steel panels made from nail-laminated timber (NLT) that integrate the mechanical and electrical systems as well as the roof membrane. These panels were manufactured off-site and installed in just three days. The new bookstore has an improved and brightened presence and provides a vibrant social space at the campus heart.



**NLT**  
Ceiling



**STEEL**  
Columns



**CONCRETE**  
Foundation and structure

**GROSS FLOOR AREA**  
818 m<sup>2</sup>

**HEIGHT**  
7 m | 2 storeys

**PROGRAM**  
Academic

**FUNCTIONS**  
Retail and social/reading spaces

**MEP CONSULTANT**  
Mechanical: Cobalt Engineering  
Electrical: MMM Group

**CONSTRUCTION**  
2013-2014

**PROJECT COST**  
CDN\$6.6M (2014)





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# UBC FOOTBALL ACADEMIC CENTRE

**ARCHITECT** | Musson Cattell Mackey Partnership  
**ENGINEER** | ByCar Engineering  
**CONSTRUCTION MANAGER** | Kindred Construction

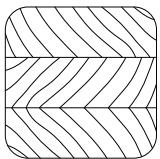


Photo courtesy of: UBC Athletics & Recreation





The UBC Football Academic Centre, situated adjacent to the football field at the UBC Thunderbird Stadium, provides space for the Varsity Football team to focus on their academic development. The building structure is composed of glue laminated timber (GLT) columns and beams, and nail laminated timber (NLT) ceiling and wall panels. The building features a retractable wall that opens fully to allow access and visibility to the stadium field.



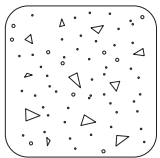
#### GLT

Columns and beams



#### HEAVY TIMBER

Columns and beams



#### CONCRETE

Foundation

#### GROSS FLOOR AREA

161 m<sup>2</sup>

#### HEIGHT

1 storey

#### PROGRAM

Athletics

#### FUNCTIONS

Study space, meeting rooms

#### CONSTRUCTION

2015

#### PROJECT COST

CDN\$1,1M (2015)





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# UNIVERSITY BOULEVARD TRANSIT SHELTERS

**ARCHITECT** | PUBLIC Architecture + Communication

**STRUCTURAL ENGINEER** | Fast + Epp

**ADDRESS** | University Boulevard, Vancouver BC



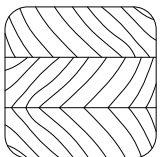
Photo courtesy: Fast + Epp





Photos courtesy: Fast + Epp

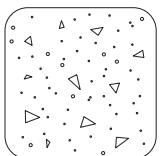
In 2013, two transit shelters were erected at the University Boulevard bus loop, and have since become an integral part to this boulevard's identity and redevelopment. Conceptually, the shelters act as an extension of the nearby Katsura tree line. Each shelter features an oversized cellular wood structure, clad in glass and supported by steel columns. The canopy form is achieved by repeating a single, easily prefabricated, glue laminated timber (GLT) module. Each module is an asymmetrical pentagon, rotated and flipped along its edges, and when assembled together create a lively hive-like structure.



**GLT**  
Roof structure



**STEEL**  
Columns



**CONCRETE**  
Foundation

**GROSS FLOOR AREA**  
2 shelters | 120 m<sup>2</sup> each

**HEIGHT**  
4 m

**PROGRAM**  
Academic

**FUNCTIONS**  
Bus shelters

**CONSTRUCTION**  
2013

**PROJECT COST**  
CDN\$475K (2013)





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# UNIVERSITY HILL SECONDARY SCHOOL

**ARCHITECT** | Thinkspace Architecture Planning Interior Design

**STRUCTURAL ENGINEER** | Fast + Epp

**CONSTRUCTION MANAGER** | Bird Construction

**ADDRESS** | 3228 Ross Drive, Vancouver BC

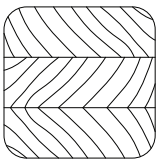


Photo: Ema Peter | Courtesy: Thinkspace Architecture Planning Interior Design





The University Hill Secondary School, located in the former UBC National Research Council building, was renovated, expanded and transformed into a new 800 student capacity school. The structure is mainly composed of concrete and steel and includes mass timber elements in strategic areas, in line with the Ministry of Education Wood First Initiative. Glue laminated timber (GLT) and heavy timber beams are used in the gym and studio roof to provide longer spans. GLT elements can also be seen at the entrance canopy.



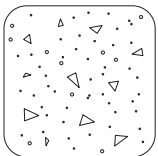
#### GLT

Columns and beams for gym, studio, and entrance canopy



#### HEAVY TIMBER

Beams



#### CONCRETE

Foundation and original structure

#### GROSS FLOOR AREA

11,835 m<sup>2</sup>

#### HEIGHT

11.7 m | 2 storeys

#### PROGRAM

Academic (Grades 9 - 12)

#### FUNCTIONS

Classroom, gymnasium, library, activity and meeting spaces

#### CERTIFICATION

LEED Gold (2016)

#### MEP ENGINEER

Mechanical: JM Bean & Company  
Electrical: Jarvis Engineering Consultants

#### SUSTAINABILITY CONSULTANT

Graham Hoffart Mathasen Architects

#### CONSTRUCTION

2012 - 2015

#### PROJECT COST

CDN\$38M (2015)





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# WAYNE AND WILLIAM WHITE ENGINEERING DESIGN CENTRE

**ARCHITECT** | McFarland Marceau Architects

**STRUCTURAL ENGINEER** | Fast + Epp

**CONSTRUCTION MANAGER** | VanMar Constructors Inc.

**ADDRESS** | 2345 East Mall, Vancouver BC

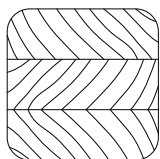






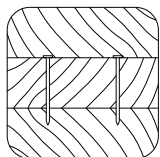
Photos: Derek Lepper | Courtesy: McFarlane Marceau Architects

The Wayne and William White Engineering Design Centre provides students from the different UBC engineering departments with a design studio, workshops and project rooms for classes and meetings. While the building structure primarily consists of concrete and steel, the atrium features an extensive use of wood and is supported by a series of glue-laminated timber (GLT) columns and beams. The atrium also uses nail-laminated timber (NLT) panels for its roof and cedar sidings on the exterior walls as sunshades. Although not certified, the building is designed to LEED Gold standard.



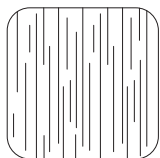
#### GLT

Atrium beams and columns



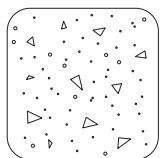
#### NLT

Atrium roof



#### WOOD SIDING

Sunshades



#### CONCRETE

Foundation and structure

#### GROSS FLOOR AREA

1,922 m<sup>2</sup>

#### HEIGHT

14.2 m | 3 storeys

#### PROGRAM

Academic

#### FUNCTIONS

Classrooms, study spaces, workshops, and mixed-use space

#### MEP ENGINEER

Mechanical: Stantec

Electrical: Acumen Engineering

#### CONSTRUCTION

2010 - 2011

#### PROJECT COST

CDN\$8,5M (2011)





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# WESBROOK COMMUNITY CENTRE

**ARCHITECT** | Franc Architecture and PUBLIC  
**STRUCTURAL ENGINEER** | Equilibrium Consulting  
**CONSTRUCTION MANAGER** | Scott Construction  
**ADDRESS** | 3335 Webber Lane, Vancouver BC



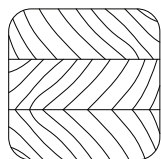
Photo: Camille Esquivel | Courtesy: Franc Architecture





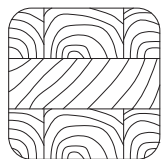
Photos: Camille Esquivel | Courtesy: Franci Architecture

The Wesbrook Community Centre serves UBC neighbourhoods, in particular the residences of Wesbrook Place, by providing gathering space and amenities such as a fitness center, a gymnasium, and activity rooms. The building's columns and beams, including the series of arched, long spanning beams of the gymnasium, are made of glue laminated timber (GLT). The floors, walls, and roof consist mainly of cross-laminated timber (CLT) panels, while cedar panels were used for the façade. Wesbrook Community Centre is a high-performance building, designed to meet energy targets equivalent to a LEED Gold standard.



#### GLT

Columns and beams



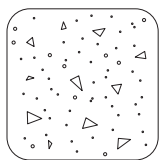
#### CLT

Exterior walls, floors, and roof



#### CEDAR PANELS

Exterior cladding



#### CONCRETE

Foundation and columns

#### GROSS FLOOR AREA

2,913 m<sup>2</sup>

#### HEIGHT

11 m | 2 storeys

#### PROGRAM

Community

#### FUNCTIONS

Social spaces, fitness centre, gymnasium, activity and board rooms

#### MEP CONSULTANT

Rocky Point Engineering

#### SUSTAINABILITY CONSULTANT

Applied Engineering Solutions

#### CONSTRUCTION

2013-2015

#### PROJECT COST

CDN\$10,8M (2015)